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ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/760,120	HILTUNEN ET AL.	
	Examiner	Art Unit	
	Albert H. Cutler	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7,10,12,13 and 15-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,10,12,13 and 15-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☑ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☑ All b)☐ Some * c)☐ None of:

1.☑ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to communication filed on August 9, 2007.

Response to Arguments

2. Applicant's arguments filed August 9, 2007 have been fully considered but they are not persuasive.

3. With regards to claim 1, Applicant argues, "The mechanical and electronic connection by means of the same connectors is not disclosed in Miyake. In addition, Miyake does not disclose a separate frame structure."

4. The Examiner respectfully disagrees. Miyake teaches of connectors(104, figures 1, 2a, 2b) which provide mechanical("supports image pickup device 1 by a lead portion", paragraph 0038) and electrical(paragraph 0039) connection means. Furthermore, the separate frame structure as asserted by Applicant is not claimed in claim 1.

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the separate frame structure in claim 1) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Objections

6. Claims 26, 28 and 29 are objected to because of the following informalities: Lack of clarity and precision.

Claim 26 recites substantially identical language to that of claim 10. Therefore, one of these claims must be cancelled, or the dependency must be changed. Appropriate correction is required.

Claim 28 recites, "the frame structure according to claim 14". However, Applicant has canceled claim 14. Upon further examination, it appears that claim 28 was most likely meant to depend from claim 27. Thus, the Examiner will interpret claim 28 to read, "the frame structure according to claim **27**". Appropriate correction is required.

Claim 29 recites, "the loading force is created by spring-like contact means". However, no "loading force" can be found previously in claim 29, or in any parent claims. Therefore, the Examiner will interpret claim 29 to read, "**A** loading force is created by spring-like contact means". Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-4, 6, 7, 15, 16, 18, 20, 21, 30 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyake(US 2002/0065102).

Consider claim 1, Miyake teaches:

A portable electronic device(figure 1), comprising:

a camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a).), which comprises

an optics zone(See "casing", 102, paragraph 0039. The top portion of the casing in figures 2a and 2b, comprises the optics zone.) having an input aperture(Lens, 103, is situated in the input aperture, paragraph 0039.),

a connector zone(The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.), and

a printed wiring board(circuit board, 2, figures 1, 2a and 2b), which includes parallel first and second sides for placing the camera module(1) and other structures(see figures 1, 2a, and 2b) in such a manner that the optics zone and the connector zone of the camera module are settled on different sides of the printed wiring board(See figures 2a and 2b, the optics zone, with the lens(103), is settled on the top side of the printed wiring board(2) and the connector zone with the image sensor(101) and leads(104) is settled on the bottom(i.e. opposite) side.), wherein the connector zone comprises

contacts(104) for connectinq the camera module electrically to counter-contacts(A circuit board, 2, is "electrically connected" to the lead portion of the image pickup device, 1, paragraph 0039. Because the circuit board is electrically connected to the image pickup device, the leads of the image pickup device must be connected to counter contacts.), and

elements(104) for mechanical attachment of the camera module(1) in such a manner that at least some of the elements(104) for mechanical attachment are the same elements as the contacts for the electric connection(See paragraph 0038. The lead portion(104) supports(i.e. is mechanically attached to) the image pickup device(1).).

Consider claim 2, and as applied to claim 1 above, Miyake et al. further teach:

the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the optics zone of the camera module is placed at least partly inside said aperture(201) of the printed wiring board(see figures 2a and 2b).

Consider claim 3, and as applied to claim 1 above, Miyake et al. further teach:

the device comprises, in addition, at least a frame structure("casing", 102), which comprises at least contacts("lead portion", 104, paragraph 0039) for connecting the camera module(paragraph 0039), an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101),

see figures 2a and 2b.), which is on the side placed against the printed wiring board in the frame structure(The bottom part of the aperture is on the side placed against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and the optics zone of the camera module is placed at least partly inside the aperture of the frame structure(The lens(103) is in the optics zone, and is placed partly inside the aperture of the frame structure(102), see figures 2a and 2b.).

Consider claim 4, and as applied to claim 1 above, Miyake et al. further teach that the device is arranged to transfer data in a wireless manner(The device is a "portable telephone", paragraph 0038.).

Consider claim 15, and as applied to claim 2 above, Miyake et al. further teach:

the device comprises, in addition, at least a frame structure("casing", 102), which comprises at least ("lead portion", 104, paragraph 0039) for connecting the camera module(paragraph 0039), an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), which is on the side placed against the printed wiring board in the frame structure(The bottom part of the aperture is on the side placed against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and the optics zone of the camera module is placed at least partly inside the aperture of the frame structure(The lens(103) is in the optics zone, and is placed partly inside the aperture of the frame structure(102), see figures 2a and 2b.).

Consider claim 18, and as applied to claim 1 above, Miyake further teaches:

at least a part of the contacts and counter-contacts are arranged in such a manner that there is a loading force between said contacts and counter-contacts in order to attach the camera module(See paragraph 0038. The lead portion supports(i.e. provides a loading force for) the image pickup device(1).).

Consider claim 20, Miyake teaches:

A method for placing a camera module in a portable device(paragraphs 0037-0043) comprising:

arranging the camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a).) on a printed wiring board(circuit board, 2, figures 1, 2a and 2b) of the device in such a manner that an input aperture(Lens, 103, is situated in the input aperture, paragraph 0039.) of the camera module settles on a different side of the printed wiring board(2) than a connector zone(The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.) of the camera module(see figure 2a and 2b), and

connecting contacts(104) of the connector zone so as to connect the camera module electrically to counter-contacts(A circuit board, 2, is "electrically connected" to the lead portion of the image pickup device, 1, paragraph 0039. Because the circuit board is electrically connected to the image pickup device, the leads of the image pickup device must be connected to counter contacts.), wherein at least a part of the

contacts(104) of the connector zone attach the camera module electrically and mechanically to the printed wiring board(See paragraph 0038. The lead portion(104) supports(i.e. is mechanically attached to) the image pickup device(1).).

Consider claim 6, and as applied to claim 20 above, Miyake et al. further teach that at least a part of the camera module(1) is placed through the printed wiring board(2, see figures 1, 2a, and 2b).

Consider claim 7, and as applied to claim 6 above, Miyake et al. further teach:

the camera module(1) is arranged on the printed wiring board(2) via a frame structure("casing", 102), and the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the frame structure(102) comprises at least an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), on the side settling against the printed wiring board(The bottom part of the aperture is on the side settling against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and said apertures are placed one on the other in such a manner that the camera module can be placed at least partly inside the aperture of said printed wiring board and the aperture of said frame structure(The camera module(1), comprises a lens(103) and an image sensor(101) which are placed within both the aperture of the frame structure(102) and the aperture(201) of the printed circuit board(2). The top and

bottom portions of the aperture of the frame structure(102) are placed on the aperture(201) of the printed circuit board(2), see figure 2a and 2b.).

Consider claim 16, and as applied to claim 20 above, Miyake et al. further teach: the camera module(1) is arranged on the printed wiring board(2) via a frame structure("casing", 102), and the printed wiring board(2) comprises at least an aperture("opening", 201, paragraph 0041) penetrating the printed wiring board(see figures 1, 2a, and 2b, paragraph 0041), and the frame structure(102) comprises at least an aperture(The casing(102) is cylindrical(paragraph 0039), and forms an aperture that extends from the lens(103) to the image sensor(101), see figures 2a and 2b.), on the side settling against the printed wiring board(The bottom part of the aperture is on the side settling against the printed wiring board(2) in the frame structure(102), see figures 2a and 2b.), and said apertures are placed one on the other in such a manner that the camera module can be placed at least partly inside the aperture of said printed wiring board and the aperture of said frame structure(The camera module(1), comprises a lens(103) and an image sensor(101) which are placed within both the aperture of the frame structure(102) and the aperture(201) of the printed circuit board(2). The top and bottom portions of the aperture of the frame structure(102) are placed on the aperture(201) of the printed circuit board(2), see figure 2a and 2b.).

Consider claim 21, and as applied to claim 20 above, Miyake further teaches:

There is a loading force between at least some contacts and counter-contacts in order to attach the camera module(See paragraph 0038. The lead portion supports(i.e. provides a loading force for) the image pickup device(1).).

Consider claim 30, Miyake teaches:

A camera module("image pickup device", 1, figure 1, figures 2a and 2b. The camera module is comprised of a lens(103) and image sensor(101 and 101a).) that can be placed on a printed wiring board(circuit board, 2, figures 1, 2a and 2b), which camera module comprises

an optics zone(See "casing", 102, paragraph 0039. The top portion of the casing in figures 2a and 2b, comprises the optics zone.) having an input aperture(Lens, 103, is situated in the input aperture, paragraph 0039.), and

a connector zone(The bottom portion of the casing, 102, forms the connector zone, see figures 2a and 2b.), the camera module having a direction of function(Light passes through the lens(103) to the image sensor(101a), thus indicating a direction of function. See the arrow of figure 2B.) which is substantially the same as a direction of the input aperture form the connector zone(see figure 2B), and the optics zone of the camera module can be placed at least partly through the printed wiring board(See figures 2A and 2B. The optics zone, through which light passes, extends from the lens(103) down to the contacts(104) and image sensor(101a), and thus is placed partially through the circuit board(2).), wherein the connector zone comprises

contacts(104) for connecting the camera module electrically to counter-contacts(A circuit board, 2, is "electrically connected" to the lead portion of the image pickup device, 1, paragraph 0039. Because the circuit board is electrically connected to the image pickup device, the leads of the image pickup device must be connected to counter contacts.), and

elements(104) for mechanical attachment of the camera module(1), in such a manner that at least some of the elements(104) for mechanical attachment are the same elements as the contacts meant for the electric connection(See paragraph 0038. The lead portion(104) supports(i.e. is mechanically attached to) the image pickup device(1).).

Consider claim 31, and as applied to claim 30 above, Miyake further teaches that the contacts(104) are placed in the connector zone on at least one side parallel with the direction of function of the camera module(See figure 2B. A portion of the of the contacts(104) are placed parallel with the direction of function(as indicated by the arrow) of the camera module.).

9. Claims 27, 12, 13, 17, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Segawa et al.(US 2002/0057468).

Consider claim 27, Segawa et al. teach

A frame structure(12, figures 2 and 4) to be placed on a printed wiring board(1) for placing a camera module(paragraphs 0034-0036), comprising

an installation aperture on a first side of the frame structure(12) for placing the camera module in the frame structure(See figures 1, 2 and 4. Part of the camera module, including the image sensor(7), is placed through the aperture in the frame structure(12).),

contacts(15) for connecting the camera module to the frame structure(12) electrically(paragraphs 0034 and 0036), and

elements(15) for mechanical attachment of the camera module(paragraphs 0034 and 0036) in such a manner that at least some of the elements(15) for mechanical attachment are in the same elements as the contacts(15) for electrical connection(See figures 1, 2, 4, and paragraphs 0034-0036).

Consider claim 12, and as applied to claim 27 above, Segawa further teaches that the contacts(15) of the frame structure(12) are placed on at least one side, which is substantially perpendicular to the side comprising the aperture(See figure 2).

Consider claim 13, and as applied to claim 12 above, Segawa further teaches that at least one contact(15) is arranged to function as a clamping device for the camera module(see paragraph 0036).

Consider claim 17, and as applied to claim 27 above, Segawa further teaches that at least one contact(15) is arranged to function as a clamping device for the camera module(see paragraph 0036).

Consider claim 28, and as applied to claim 27 above, Segawa et al. further teach that at least a part of the contacts(15) of the frame structure(12) and the contacts(8b) of the camera module(figure 2) are arranged in such a manner that there is a loading force between said contacts in order to attach the camera module(paragraphs 0034 and 0036).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 19, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake in view of Segawa et al.(US 2002/0057468).

Consider claim 19, and as applied to claim 18 above, Miyake teaches of a loading force(see claim 18 rationale), but does not explicitly teach that said loading force is created by spring-like contact means.

Segawa et al. are similar to Miyake in that Segawa et al. teach of a camera module(see figures 1, 2, and 4) including a lens(5) and image-pickup device(7). Segawa et al. also similarly teach that said camera module is attached to a printed circuit board(1).

However, in addition to the teachings of Miyake, Segawa et al. teach that a loading force is created by spring-like contact means(15) in order to clamp the camera module to the printed circuit board(paragraphs 0034-0036).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a spring-like contact system as taught by Segawa et al. in place of the external portion of the leads(104) taught by Miyake for the benefit of reducing the manufacturing time and size of the portable electronic device because soldering would no longer be required(Segawa et al., paragraphs 0007-0010, 0033.).

Consider claim 22, and as applied to claim 21 above, Miyake teaches of a loading force(see claim 21 rationale), but does not explicitly teach that said loading force is created by spring-like contact means.

Segawa et al. are similar to Miyake in that Segawa et al. teach of a camera module(see figures 1, 2, and 4) including a lens(5) and image-pickup device(7). Segawa et al. also similarly teach that said camera module is attached to a printed circuit board(1).

However, in addition to the teachings of Miyake, Segawa et al. teach that a loading force is created by spring-like contact means(15) in order to clamp the camera module to the printed circuit board(paragraphs 0034-0036).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a spring-like contact system as taught by Segawa et al. in place of the external portion of the leads(104) taught by Miyake for the benefit of reducing the manufacturing time and size of the portable electronic device because soldering would no longer be required(Segawa et al., paragraphs 0007-0010, 0033.).

Consider claim 29, and as applied to claim 15 above, Miyake teaches of a loading force(See paragraph 0038. The lead portion supports(i.e. provides a loading force for) the image pickup device(1).), but does not explicitly teach that said loading force is created by spring-like contact means.

Segawa et al. are similar to Miyake in that Segawa et al. teach of a camera module(see figures 1, 2, and 4) including a lens(5) and image-pickup device(7). Segawa et al. also similarly teach that said camera module is attached to a printed circuit board(1).

However, in addition to the teachings of Miyake, Segawa et al. teach that a loading force is created by spring-like contact means(15) in order to clamp the camera module to the printed circuit board(paragraphs 0034-0036).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use a spring-like contact system as taught by Segawa et al. in place of the external portion of the leads(104) taught by Miyake for the benefit of reducing the manufacturing time and size of the portable electronic device because soldering would no longer be required(Segawa et al., paragraphs 0007-0010, 0033.).

13. Claims 23-26 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al.(US 2002/0057468) in view of Takanao et al.(Japanese Patent Application Publication 11-191865).

Consider claim 23, Segawa et al. teach:

An apparatus(figures 1, 2 and 4) comprising:

a printed wiring board(1), and

a frame structure(12) connected to the printed wiring board(1) for installing a camera module(paragraphs 0034-0036), wherein

the frame structure(12) has an aperture on a side placed against the printed wiring board(1, see figures 1, 2 and 4), said aperture of the frame structure(12) being placed in such a manner that at least part of the camera module can be placed through the aperture of the frame structure to the printed wiring board(See figures 1, 2 and 4.

Part of the camera module, including the image sensor(7), is placed through the aperture in the frame structure(12).), wherein

the frame structure(12) has contacts(15) for connecting the camera module electrically to the frame structure(paragraph 0034), and elements(15) for mechanical attachment of the camera module(paragraph 0036), wherein at least some of the elements(15) for mechanical attachment are the same elements as the contacts(15) for connecting the camera module electrically to the frame structure(See figures 1, 2, 4, and paragraphs 0034-0036).

However, Segawa et al. do not explicitly teach that the printed wiring board has an aperture.

Takanao et al. are similar to Segawa et al. in that Takanao et al. teach of a camera module(11, see drawing 1) with a lens(17) and image sensor(12). Takanao et al. also similarly teach that said camera module(11) is attached to a circuit board(18, paragraphs 0011-0012, drawing 1).

However, in addition to the teachings of Segawa et al., Takanao et al. teach that the printed wiring board(18) has an aperture(18a), and that a portion of the camera module(11) can be placed through the aperture of the printed wiring board(18, figure 1, paragraphs 0011 and 0012).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the printed wiring board taught by Segawa et al. comprise an aperture as taught by Takanao et al., and extend a part of the camera module through the aperture as taught by Takanao et al. for the benefit of successfully

creating a more versatile and thin camera module, wherein the height of the camera module does not greatly extend above the height of the next highest height of other electronic parts mounted on the same circuit board, and thus can be packaged in a much smaller space(Takanao et al., paragraphs 0001 and 0004).

Consider claim 10, and as applied to claim 23 above, Segawa et al. further teach that there are contacts(15) in the frame structure(12) for connecting the camera module(paragraphs 0034-0036), which are placed on at least the side parallel to the direction of the printed wiring board(1, see figure 2).

Consider claim 24, and as applied to claim 23 above, Segawa et al. further teach that at least a part of the contacts(15) of the frame structure(12) and corresponding contacts(8b) of the camera module(figure 2) are arranged in such a manner that there is a loading force between said contacts in order to attach the camera module(paragraphs 0034 and 0036).

Consider claim 25, and as applied to claim 24 above, Segawa et al. further teach that the loading force is created by spring-like contact means(15) in order to clamp the camera module to the printed circuit board(paragraphs 0034-0036).

Consider claim 26, and as applied to claim 23 above, Segawa et al. further teach that there are contacts(15) in the frame structure(12) for connecting the camera

module(paragraphs 0034-0036), said contacts are placed on at least the side parallel to the direction of the printed wiring board(1, see figure 2).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER